

Claims

- 1 1. A method of measuring jitter, comprising:
2 evaluating a clock signal within a first window;
3 determining a recovered clock period from the clock signal within the first
4 window;
5 evaluating the clock signal within a second window, the second window
6 being smaller than the first window; and
7 determining the clock signal's jitter within the second window.
- 1 2. The method of measuring jitter of claim 1, wherein the second window is located
2 within the first window.
- 1 3. The method of measuring jitter of claim 1, wherein the second window is at least
2 partially located outside the first window.
- 1 4. The method of measuring jitter of claim 1, wherein the clock signal is recovered
2 from a data signal.
- 1 5. The method of measuring jitter of claim 1, further comprising determining a jitter
2 figure of merit from evaluation of jitter within the second window.
- 1 6. The method of measuring jitter of claim 1, wherein the first window is a fraction
2 of a modulation period of a spread spectrum clock.
- 1 7. The method of measuring jitter of claim 1, further comprising evaluating the
2 clock signal within more than one second window, each second window being
3 smaller than the first window and located within the first window.

- 1 8. The method of measuring jitter of claim 1, wherein the clock signal is a PCI
2 Express bus clock signal.
- 1 9. The method of measuring jitter of claim 1, wherein the second window position
2 is approximately centered within the first window.
- 1 10. The method of measuring jitter of claim 1, further comprising sampling the
2 clock signal for evaluation.
- 1 11. The method of measuring jitter of claim 10, further comprising using Sinc
2 interpolation to produce interpolated sampling points.
- 1 12. The method of measuring jitter of claim 11, further comprising using linear
2 interpolation to estimate transition points.
- 1 13. The method of measuring jitter of claim 1, wherein determining a recovered
2 clock period comprises employing a minimize deviation fit algorithm to the clock
3 signal within the first window.
- 1 14. The method of measuring jitter of claim 1, wherein determining the clock
2 signal's jitter within the second window comprises measuring the difference
3 between an expected clock transition point and an actual transition point for each
4 clock transition point within the window.
- 1 15. The method of measuring jitter of claim 1, further comprising generation of an
2 eye pattern, and comparison of the generated eye pattern with an eye template
3 defining maximum allowable jitter.

- 1 16. A jitter measurement apparatus, the apparatus comprising a clock signal
2 measurement module operable to:
3 evaluate a clock signal within a first window;
4 determine a recovered clock period from the clock signal within the first
5 window;
6 evaluate the clock signal within a second window, the second window being
7 smaller than the first window and located within the first window; and
8 determine the clock signal's jitter within the second window.
- 1 17. The jitter measurement apparatus of claim 16, wherein the second window is
2 located within the first window.
- 1 18. The jitter measurement apparatus of claim 16, wherein the second window is at
2 least partially located outside the first window.
- 1 19. The jitter measurement apparatus of claim 16, the apparatus further operable to
2 recover the clock signal from a data signal.
- 1 20. The jitter measurement apparatus of claim 16, the clock signal measurement
2 module further operable to determine a jitter figure of merit from evaluation of jitter
3 within the second window.
- 1 21. The jitter measurement apparatus of claim 16, wherein the first window is a
2 fraction of a modulation period of a spread spectrum clock.
- 1 22. The jitter measurement apparatus of claim 16, the clock signal measurement
2 module further operable to evaluate the clock signal within more than one second
3 window, each second window being smaller than the first window and located
4 within the first window.

- 1 23. The jitter measurement apparatus of claim 16, wherein the clock signal is a PCI
2 Express bus clock signal.
- 1 24. The jitter measurement apparatus of claim 16, wherein the second window
2 position is approximately centered within the first window.
- 1 25. The jitter measurement apparatus of claim 16, the clock signal measurement
2 module further operable to sample the clock signal for evaluation.
- 1 26. The jitter measurement apparatus of claim 25, the clock signal measurement
2 module further operable to produce interpolated sampling points using Sinc
3 interpolation.
- 1 27. The jitter measurement apparatus of claim 26, the clock signal measurement
2 module further operable to estimate transition points using linear interpolation.
- 1 28. The jitter measurement apparatus of claim 16, wherein determining a recovered
2 clock period comprises employing a minimize deviation fit algorithm to the clock
3 signal within the first window.
- 1 29. The jitter measurement apparatus of claim 16, wherein determining the clock
2 signal's jitter within the second window comprises measuring the difference
3 between an expected clock transition point and an actual transition point for each
4 clock transition point within the window.
- 1 30. The jitter measurement apparatus of claim 16, the clock measurement module
2 further operable to generate an eye chart, the eye chart configured for comparison
3 with an eye pattern template indicating maximum allowable jitter.

1 31. A machine-readable medium with instructions coded thereon, the instructions
2 when executed operable to cause a computerized system to:
3 evaluate a clock signal within a first window;
4 determine a recovered clock period from the clock signal within the first
5 window;
6 evaluate the clock signal within a second window, the second window being
7 smaller than the first window and located within the first window; and
8 determine the clock signal's jitter within the second window.

1 32. The machine-readable medium of claim 31, wherein the second window is
2 located within the first window.

1 33. The machine-readable medium of claim 31, wherein the second window is at
2 least partially located outside the first window.

1 34. The machine-readable medium of claim 31, wherein the clock signal is
2 recovered from a data signal.

1 35. The machine-readable medium of claim 31, the instructions further operable
2 when executed to calculate a jitter figure of merit from evaluation of jitter within the
3 second window.

1 36. The machine-readable medium of claim 31, wherein the first window is a
2 fraction of a modulation period of a spread spectrum clock.

1 37. The machine-readable medium of claim 31, the instructions further operable
2 when executed to evaluate the clock signal within more than one second window,
3 each second window being smaller than the first window and located within the first
4 window.

1 38. The machine-readable medium of claim 31, wherein the clock signal is a PCI
2 Express bus clock signal.

1 39. The machine-readable medium of claim 31, wherein the second window
2 position is approximately centered within the first window.

1 40. The machine-readable medium of claim 31, the instruction further operable
2 when executed to sample the clock signal for evaluation.

1 41. The machine-readable medium of claim 40, the instructions further operable
2 when executed to produce interpolated sampling points using Sinc interpolation.

1 42. The machine-readable medium of claim 41, the instructions further operable
2 when executed to estimate transition points using linear interpolation.

1 43. The machine-readable medium of claim 31, wherein determining a recovered
2 clock period comprises employing a minimize deviation fit algorithm to the clock
3 signal within the first window.

1 44. The machine-readable medium of claim 31, wherein determining the clock
2 signal's jitter within the second window comprises measuring the difference
3 between an expected clock transition point and an actual transition point for each
4 clock transition point within the window.

1 45. The machine-readable medium of claim 31, the instructions further operable to
2 generate an eye chart, the eye chart configured for comparison with an eye pattern
3 template indicating maximum allowable jitter.